

# LEARN Brings Research to Texas

## UT Arlington's Tier II Research Center combines with SMU and UT Dallas to help Texas physicists unlock the secrets of the universe

Physicists working on the CERN Large Hadron Collider (LHC) project are seeking answers to the most fundamental questions of the properties of matter. To succeed, they must harness a robust and reliable computing network.

That's exactly what the Lonestar Education and Research Network (LEARN) provides.

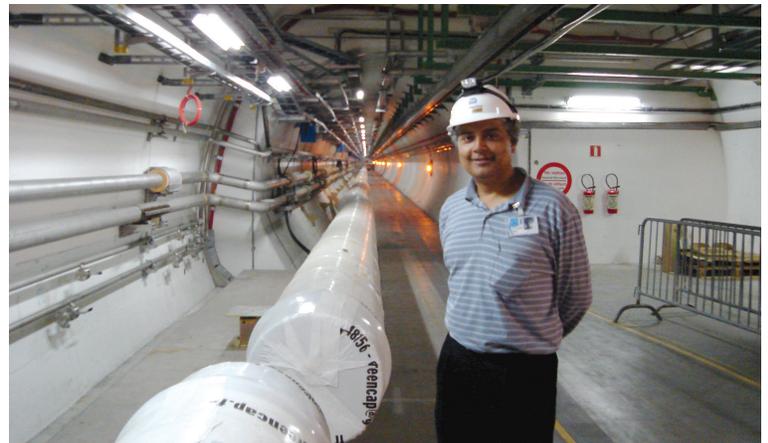
A non-profit collaboration of Texas higher education institutions, LEARN delivers high bandwidth optical networks that help these universities secure valuable research dollars. When applying for grants with the National Science Foundation or other organizations, the criteria include the availability of existing network connectivity. LEARN provides the connections within Texas and as a pathway to national and international networks.

The LHC project is one of many examples of the critical role LEARN plays in bringing grants to Texas. The world's largest and most complex particle physics experiment, it is expected to resolve major conundrums about the composition of matter and energy in the universe. ATLAS, a giant microscope the size of a football field and more than eight stories high, is part of the LHC project.

Brookhaven National Laboratory was designated as the Tier I Center for ATLAS in the United States. The University of Texas at Arlington is one of five Tier II centers and connects to Brookhaven to pull data for its portion of the research. Southern Methodist University, UT Dallas and other sites are Tier III centers and pull their data from Tier II centers.

As the U.S. ATLAS operations coordinator, UT Arlington physics Professor Kaushik De is responsible for organizing computing operations at Tier I and Tier II facilities.

"ATLAS is like a high-speed, high-resolution, one-of-a-kind camera to record and measure every collision that takes place," said Dr. De, a high energy physicist and principal investigator for UT Arlington's research grant. "Access to LEARN was paramount to UT Arlington as we requested grant consideration."



UT Arlington Physics Professor Kaushik De, director of the Southwest Tier 2 Center, in the Large Hadron Collider tunnel in Geneva, Switzerland. The LHC tunnel forms a circle 27 kilometers long, 100 meters under the surface, straddling the countries of France and Switzerland.

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## What is LEARN?

The Lonestar Education and Research Network (LEARN) is a non-profit collaboration of Texas higher education institutions that supports their research, education, health care and public service missions through the innovative development, operation and utilization of advanced statewide networking and access to global services and related services.

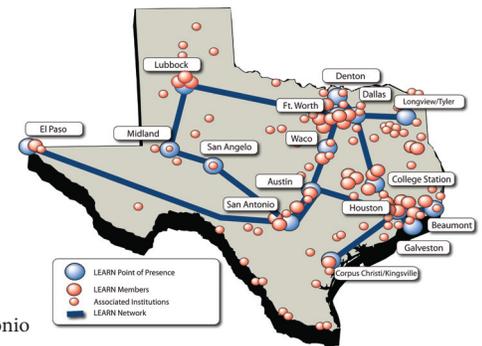
## Who is LEARN?

LEARN's 35 members represent 38 public universities, five private universities and 50 community and junior colleges of the Texas Association of Community Colleges. The organization also includes the Texas Education Telecommunications Network (TETN), a consortium of 21 organizations representing K-12. LEARN serves 93 percent of students in Texas public four-year institutions and 58 percent of all higher education students statewide.

## LEARN Members

Baylor College of Medicine	Texas Tech University System
Baylor University	Texas Woman's University
Lamar University	The University of Houston System
Northeast Texas Consortium (NETnet)	The University of North Texas System
Prairie View A&M University	The University of Texas-Pan American
Rice University	The University of Texas at Arlington
Sam Houston State University	The University of Texas at Austin
Southern Methodist University	The University of Texas at Dallas
Stephen F. Austin State University	The University of Texas at El Paso
Texas A&M System Health Science Center	The University of Texas at San Antonio
Texas A&M University	The University of Texas Health Science Center at Houston
Texas A&M University-Corpus Christi	The University of Texas Health Science Center at San Antonio
Texas A&M University System	The University of Texas Health Science Center at Tyler
Texas Association of Community Colleges	The University of Texas M.D. Anderson Cancer Center
Texas Christian University	The University of Texas Medical Branch at Galveston
Texas Education Telecommunications Network (TETN)	The University of Texas Southwestern Medical Center at Dallas
Texas State University-San Marcos	The University of Texas System
Texas Tech University	

## The State of Texas and LEARN



## What does LEARN do?

LEARN enhances Texas' research and economic competitiveness by providing state-of-the-art, cost-effective data communications that improve education. In cooperation with its member universities and colleges, LEARN operates and maintains an intrastate optical fiber network. The high bandwidth transport provided for research and education includes connections to networks and services including the Internet2, TeraGrid and the National LambdaRail (NLR).

## How does LEARN benefit Texas?

- Provides multi-institution access to the Internet2 and NLR backbone for advanced research.
- Provides a lower-cost and higher-reliability connection to the Internet2.
- Gives Texas universities and colleges access to the TeraGrid backbone via the node at UT Austin.
- Supplies backbone support for the TETN statewide educational intranet, providing course content and distance learning for K-20 and beyond.
- Provides support and services for emerging telemedicine and homeland defense applications.